Accurate
TECHNOLOGY INC.
Linear Digital Measuring Systems

ProRF SPC Transmitter

User Manual

Firmware version 1.0 and greater

FCC NOTICE

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the Receiver.
- Connect the equipment to an outlet on a circuit different from that to which the Receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

Operation with non-approved equipment is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications made to the equipment without the approval of the manufacturer could void the user's authority to operate this equipment.

ATTENTION

This Transmitter is compatible with ProRF Receiver 700-1038-001 pictured below ONLY. It CAN NOT be used with ProScale Receiver model 700-1036-0xx (with external antenna)

OK

WARRANTY

Accurate Technology, Inc., warrants this product against defective parts and workmanship for 1 year commencing from the date of original purchase. Upon notification of a defect, Accurate Technology, Inc., shall have the option to repair or replace any defective part. Such services shall be the customer's sole and exclusive remedy. Expenses incidental to repair, maintenance, or replacement under warranty, including those for labor and material, shall be borne by Accurate Technology, Inc. (Including freight or transportation charges during the first 30 days).

Except as expressly provided in this warranty, Accurate Technology, Inc., does not make any warranties with respect to the product, either expressed or implied, including implied warranties of merchantability or fitness for a particular purpose, except as expressly provided in this agreement.

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P/N 800-1342-001, Revision A,
Firmware Version 1.000

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SECTION 1 GENERAL INFORMATION

Introduction

Thank you for purchasing the ProRF SPC Transmitter. This radio Transmitter unit is designed to be used in conjunction with Accurate Technology, Inc. ProScale® linear measuring systems and the Accurate Technology, Inc. ProRF Receiver.

The purpose of this system is to provide a **two-way** wireless communication channel between any ProScale measuring system with a 10 pin SPC output and a computer or other computing device.

The following is a list of features for the ProRF SPC Transmitter:

- 2.4 GHz radio transceiver providing two-way RF communications using the industry standard 802.15.4 communications protocol.
- 2 LEDs provide RF message status and low battery reporting.
- Operates from a single lithium coin cell battery.
- 3 to 6+ months battery lifetime depending on usage.
- Sixteen selectable RF channels for interference free operation.
- Typical RF signal range: 50’ to 100’ depending on the environment.
- Small, compact enclosure designed to plug into ProScale Digital Readouts (DROs) that are equipped with an SPC data port.

What This Manual Contains

This manual includes information on the **ProRF SPC Transmitter** only.

The ProRF SPC Transmitter is designed to operate with any ProScale General Purpose surface mount LCD Digital Readout (DRO) that is built with an SPC data port.

The companion **ProRF Receiver** is reviewed in a separate user manual.

ProRF Receiver Part Number: 700-1038-001

For operation and other information on related products, please refer to the manuals for those products.

Terminology

This section provides a brief description of terms used within this manual.

DRO – Refers to a ProScale Digital Readout.

Association/Learning – Associates one or more Transmitters with the ProRF Receiver to allow position messages to be received.

TigerStop – An automated saw stop fence system that can interface with the ProRF Receiver to automatically build cut-list based measurements from a ProScale or ProPanel Measuring System.

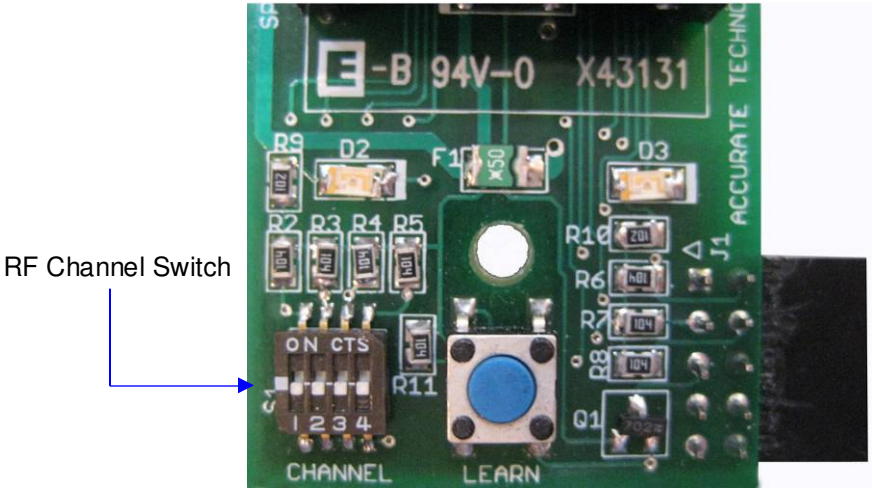
Setting the RF Channel

The ProRF SPC Transmitter can be configured to operate on 1 of 16 possible radio frequency channels. The default channel is 0.

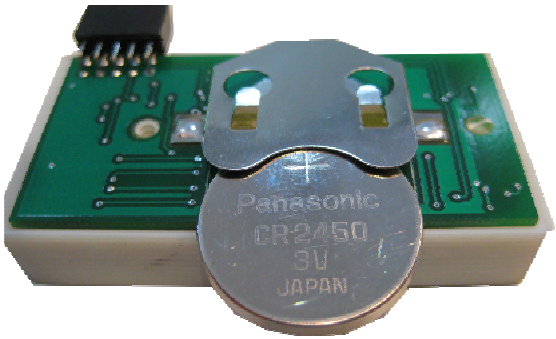
Unless there are other ProRF systems in range that could cause a conflict, the default channel setting of 0 should be used.
Note: If the Transmitter's RF channel is changed from its default setting, the Receiver's RF channel must also be changed.

To change the channel, complete the following steps. If the default channel is to be used, skip to **Connecting the Transmitter** (page 10).

1. Using a Phillips screwdriver, remove the two screws from the back of the housing.
2. Touch a grounded metal surface to discharge any static electricity from your body, and then remove the front and back cover of the Transmitter enclosure.
3. Slide out the coin cell battery from the battery holder and set it aside.
4. Locate the address switch in the lower left hand corner of the circuit board. Set the desired channel using the dip switch. The table on the page 9 illustrates the switch setting versus the channel number.



5. Reinstall the battery into the battery holder. **PLUS** side is **UP**. When the battery is installed, the two LEDs on the front of the Transmitter will both flash momentarily, then go out.
   NOTE: If the LEDs continue to flash on and off, remove the battery for 10 seconds and then re-install it.



6. Install the circuit board into the enclosure and secure with the two Phillips head screws.

RF Channel Switch Settings

RF Channel	SW 1	SW 2	SW 3	SW 4
0	OFF	OFF	OFF	OFF
1	**ON**	OFF	OFF	OFF
2	OFF	**ON**	OFF	OFF
3	**ON**	**ON**	OFF	OFF
4	OFF	OFF	**ON**	OFF
5	**ON**	OFF	**ON**	OFF
6	OFF	**ON**	**ON**	OFF
7	**ON**	**ON**	**ON**	OFF
8	OFF	OFF	OFF	**ON**
9	**ON**	OFF	OFF	**ON**
10	OFF	**ON**	OFF	**ON**
11	**ON**	**ON**	OFF	**ON**
12	OFF	OFF	**ON**	**ON**
13	**ON**	OFF	**ON**	**ON**
14	OFF	**ON**	**ON**	**ON**
15	**ON**	**ON**	**ON**	**ON**

Connecting the Transmitter

The ProRF SPC Transmitter is designed to operate with any ProScale general purpose surface mount LCD Digital Readout (DRO) that has a built in SPC data port.

To install the SPC Transmitter, complete the following:

1. Peel off the backing of the pressure sensitive double faced tape located on the side of the Transmitter housing.
2. Plug the 10 pin header from the SPC Transmitter into the side of the ProScale DRO's SPC data port. Be sure that all of the pins are properly aligned.

3. Press the Transmitter enclosure securely against the DRO housing to ensure that the double faced tape contacts both units adequately.

SECTION 3 ASSOCIATION

Each ProRF SPC Transmitter is assigned a unique 64-bit ID that identifies that Transmitter to a Receiver. For proper communication to occur between the Transmitter and Receiver, each Transmitter in the system must be *associated* or "*learned*" by the Receiver.

The association process is a one time operation where the Receiver is placed into a special mode which listens for new Transmitters to be acquired. To learn a particular Transmitter, the user then activates a "learn" pushbutton on the desired Transmitter. The Transmitter sends its unique 64-bit ID which the Receiver then stores in its permanent memory. Following this operation, the Receiver will accept messages from any learned Transmitter and reject messages from unknown Transmitters.

If you purchased this SPC Transmitter as a system, i.e. with a ProRF Receiver, the Receiver and Transmitter(s) have already been associated at the factory during final testing. If you have purchased this Transmitter separately, you will have to associate it with your ProRF Receiver.

The association procedure is outlined below. Additional information regarding this operation can also be found in the ProRF Receiver user's manual.

Associating Transmitters & Receivers

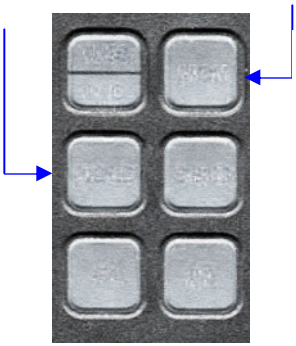
To associate one or more Transmitters with a Receiver, complete the following:

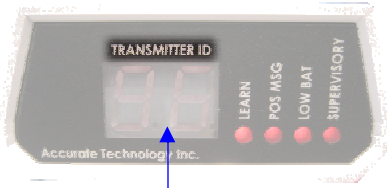
1. Connect to the ProRF Receiver using HyperTerminal™ or other terminal emulation program as described in the ProRF Receiver user's manual.
2. Enable Transmitter association by issuing the command A 1<ENTER>. The Receiver will indicate that learning is enabled.
3. Insert a bent paperclip into the hole on the face of the SPC Transmitter labeled PGM, depressing the small button underneath. The MSG SENT LED should momentarily light on the Transmitter and the Receiver will send the following message to the PC: "Transmitter Learned". The association is now complete.
4. To disable Transmitter association, send the command A 0<ENTER> from the PC to the Receiver. The Receiver will indicate that Transmitter association is now disabled.

SECTION 4 OPERATION

To send a position message from the ProScale DRO to the ProRF Receiver, press the SEND button on the DRO. The DRO LCD will display "**Snd**" for 1 second.
If the transmission is successful, the MSG SENT LED on the SPC Transmitter will flash very briefly, about 1/10 second. The ProRF Receiver will momentarily display the Transmitter ID along with a flash of the POS MSG LED.

SEND button location
(depends on DRO version)





Transmitter ID Displayed

If the transmission was not successful, the MSG SENT LED on the SPC Transmitter will flash for a longer time, about 1 ½ seconds. If this occurs, the user should try to retransmit again by pressing the SEND button on the DRO. If the error continues, a range issue or interference may be preventing the transmission from being received. Move the DRO closer to the Receiver and attempt the transmission again.

Each time the SEND button on the DRO is depressed, the SPC Transmitter will send a new position message to the Receiver.

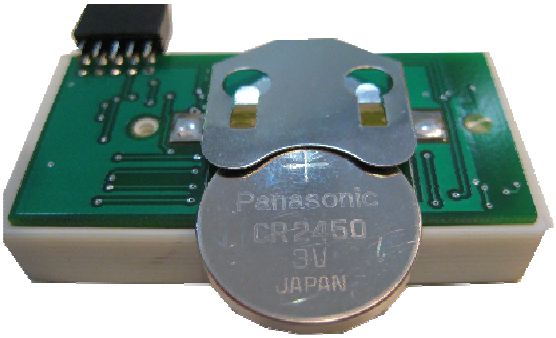
The user can also activate a special *delete* function that will transmit a special message to the ProRF Receiver. This message will cause a *delete last measurement* signal to be sent to the PC or TigerStop. In the case of a PC, it causes a **DELETE** text message to be displayed. When using a TigerStop, it causes the last entry in the cut list to be deleted. To activate the delete function, press the F2 button on the DRO.

NOTE: The delete function only operates with ProScale DROs that have firmware version 2.x9 or above.

Battery Replacement

Periodically, the coin cell battery in the SPC Transmitter will require replacement. A low battery condition is detected by the Transmitter and will be indicated by flashing the LOW BAT LED when a position message is sent. A low battery condition still allows normal operation but the transmission range may be diminished. Change the battery as soon as possible by completing the following:

1. Unplug the SPC Transmitter from the side of the ProScale DRO.
2. Using a Phillips screwdriver, remove the two screws from the back of the housing.
3. Touch a grounded metal surface to discharge any static electricity from your body, and then remove the back cover of the Transmitter enclosure.
4. Slide out the coin cell battery from the battery holder.
5. Install a new CR2450 (or equivalent) lithium battery into the battery holder with the **PLUS** side **UP**. When the battery is installed, the two LEDs on the front of the Transmitter will both flash momentarily. **NOTE: If the LEDs continue to flash on and off, remove the battery for 10 seconds and then re-install it.**
6. Re-install the rear enclosure cover and replace the screws.
7. Plug the SPC Transmitter into the DRO's SPC data port, ensuring the pins are correctly aligned.



Product Registration

Fill out for your records and
FAX to Accurate Technology @ +1.828.654.8824
Or register online at: www.proscale.com/registration.htm

Name_____

E-Mail_____

Company _____

Address_____

Address_____

City _____

State/Region _____

Zip/Postal Code_____

Country _____

Purchased From: _____

Purchased When: _____

Serial Number: _____

Thank you for choosing an Accurate Technology Product

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This manual is available at www.proscale.com

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